

THE MINERAL INDUSTRY OF POLAND

By Walter G. Steblez

In 1998, Poland was the second largest producer of copper in Europe and Central Eurasia and ranked among the top 10 world producers of copper in terms of mine output and refined metal production (Edelstein, 2000). Poland also was among the world's major producers of silver and sulfur. The country was one of the region's largest mine producers of lead and zinc, as well as a leading European and Central Eurasian producer of lime, nitrogen (in ammonia), and salt (Kostick, 1999; Ober, 1999). With respect to mineral fuels, Poland accounted for about 4% of total world output of coal in 1998.

Poland's economy remained robust. According to the latest data, the gross domestic product (GDP) in 1998 grew at a rate of 4.8% compared with that of 1997. The gross output of industry represented about 24% of the GDP, and that of the mining and quarrying sector accounted for 2.5%. The total value of industrial production rose by 2.6% compared with that of 1997. The aggregated values of mining and quarrying output, however, declined by 14.1% compared with those of 1997; coal mining and peat quarrying showed a joint decline of 19%. Total sales, in constant prices, by the mining and quarrying sector declined by about 13%, of which sales by the bituminous coal, lignite, and peat industries collectively fell by 15% (Główny Urząd Statystyczny, 1999, p. 392). The overall level of sales of the manufacturing sector registered an increase of about 33% in 1998 compared with that of 1997. Sales of nonmetallic mineral products, chemicals and chemical products, and base metals rose by about 38%, 14%, and 8%, respectively. Total sales of coke and refined petroleum products and derivatives, however, declined by 9% during the year (Główny Urząd Statystyczny, 1999, p. 392).

Major activities in the minerals industry included continuing privatization programs for most branches of Poland's minerals industry and a marked increase in foreign investor interest in its steel sector, which encompassed such major steel companies Huta Katowice S.A. and P.P. Huta im. T. Sendzimira. Other issues relating to the steel industry included merger proposals for Huta "Ostrowiec" S.A. and Huta "Stalowa Wola" S.A.

To accommodate Poland's entrance into the European Union (EU), the Government's policies remained dedicated toward achieving structural adjustments to the economy. Restructuring and privatization, with often-attendant contraction of such industrial sectors as steel, have been an important industry trend among most of the transitional economies in Central Europe and the Balkans. Foreign investment and rationalization also were important elements in the Polish Government's proposals for the restructuring of the entire steel industry (Steel Times, 1998). The Government's plans included the full privatization of Poland's steel industry by 2001; a planned reduction of overall

capacity to 13.3 million metric tons per year (Mt/yr) by 2005; and the increase in the production of rolled flat products, as a percentage of total output, to 50% from 38% (Paxton, 1998).

In early 1998, officials from Poland and the EU further negotiated Poland's tariff reductions on imports of EU steel. An earlier agreement called for implementing tariff reductions on EU steel to 6% from 9% in 1997 and to 3% from 6% in 1998. This goal was not achieved, however, and Poland and the EU agreed to let the 9% tariff stand in 1997, provided that a restructuring plan would be developed by June 30, 1998. In January 1998, Poland reduced the 9% tariff to 6% (Metal Bulletin, 1998b). The proposed tariff reduction regime was among the criteria specified by the EU for Poland's entry into the EU. Additionally, the EU's European Commission informed the Polish Government that funds from the Phare Program would be allocated only for projects that demonstrably help Poland prepare for EU membership (Metal Bulletin, 1998k).

The Government submitted a restructuring plan at the end of June. The European Confederation of Iron and Steel Industries (Eurofer), the EU iron and steel federation, expressed strong reservations concerning the plan. Eurofer's main objections were the following:

- Rather than ending in 1998, Poland proposed maintaining a 3% tariff rate until the end of 1999;
- Proposals by Poland to increase rather than to decrease steel production capacity (hot-rolled products were to rise from 9.4 Mt/yr in 1997 to 11.2 Mt/yr by 2005; flat products concomitantly were to rise from 3.7 Mt/yr to 5.5 Mt/yr, although long products were to remain at 5.7 Mt/yr); and
- Concern that a proposal by the Government of Poland to extend a period of grace for allowing state subsidies to industry would result in their continuation (Metal Bulletin, 1998c).

As already indicated, Huta Katowice played a prominent role in the steel sector during the year. The management of Huta Katowice was replaced in early 1998, and the company's new management was expected to make major cost reductions and to speed up restructuring to make Huta Katowice more attractive to investors (Metal Bulletin, 1998h). During the earlier part of the year, Voest Alpine Stahl AG (VA) of Austria and Thyssen Krupp Stahl AG of Germany were among the first to express serious interest in Huta Katowice. A joint venture also was formed between Huta Katowice and Huta Sendzimira to produce 2 Mt/yr of flat steel products (Metal Bulletin, 1998d). Later in the year, other bidders and potential bidders included Hoogovens and Ispat International of the Netherlands, Danieli of Italy, and British Steel PLC. At yearend, British Steel appeared to be the likely candidate for majority stock purchase of Huta

Katowice. Bids by VA and Hoogovens for Huta Sendzimira were put on hold by the Government of Poland until the status of Huta Katowice was resolved (Metal Bulletin, 1998g).

Activities concerning Huta Sendzimira began in early 1998 with the initiation of a feasibility study for a stainless steel cold-rolling mill under the auspices of Stalprodukt, a Huta Sendzimira subsidiary. Stalprodukt was to assess the project's market viability by studying the level of the domestic requirement of stainless steel as well as export possibilities. The actual study was undertaken by engineering consultants Austroplan of Australia and Poland's Institute for Ferrous Metallurgy in Gliwice (Metal Bulletin, 1998a). Other preparatory work for privatization involved Government plans to separate noncore activities, assets, and debts from Huta Sendzimira to create an enterprise focused entirely on the output of downstream steel products. According to Government projections, about \$800 million would have to be invested in the plant by 2005 to modernize the operation fully (Metal Bulletin, 1998j).

In October, Huta Sendzimira's privatization board reported that it intended to recommend acceptance of a joint bid by and VA and Hoogovens to the Ministry of the Treasury, the temporary legal owner of Huta Sendzimira. The recommendation would be based on an agreement reached between Huta Sendzimira and the VA/Hoogovens Group, which would grant exclusive right to the group to negotiate conditions for acquiring a majority stake in the company (Metal Bulletin, 1998i). As indicated above, however, this move was put into abeyance until the issue of the Huta Katowice sale was resolved.

In other developments, Huta Sendzimira contracted VA to modernize a wide strip mill at the company's Crakow facilities. The modernization program, reportedly worth \$208 million, was to include walking beam furnaces and other assemblies at the mill (Metal Bulletin, 1998f). This program constituted the second phase of the company's modernization and facility expansion program. In the first phase, improved product quality also was carried out by VA and completed in 1997.

In other steel industry developments, Huta Baildon BHH, a state-owned producer of special and stainless long products,

commissioned a new hot-rolling strip mill at its Katowice facilities late in the year. The new mill, which replaced the company's existing rolling mill, would produce about "67,000 t/yr of round, square, hexagonal, and flat bar, up to 250 millimeters in width, as well as narrow strip and bar-in-coil" (Metal Bulletin, 1998e, p. 19). Work on the new mill began in February 1996, and at completion the total cost amounted to about \$53 million.

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TABLE 1
POLAND: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1994	1995	1996	1997	1998	
METALS						
Aluminum, metal, primary	49,509	55,728	51,900	53,614 r/	53,168	
Cadmium, metal, primary	61	--	--	22 r/	20 e/	
Copper:						
Ore:						
Gross weight	thousand tons	26,136	26,463	27,427	21,165	27,594
Cu content		423,600	431,100	472,600	464,600 r/	490,900
Concentrate:						
Gross weight	thousand tons	1,494	1,507	1,650 r/	1,600 r/	1,750 e/
Cu content		378,200	384,200	421,900	414,800 r/	436,200
Metal:						
Smelter:						
Primary e/		390,000	395,000	410,000	415,500 r/ 3/	422,243 3/
Secondary e/		14,000	15,000	4,800	15,000	10,000
Total		404,000	410,000	414,800	430,500 r/	432,243
Refined, electrolytically, primary and secondary		405,093	406,700 r/	424,700 r/	440,600 r/	446,837
Gold, metal, smelter	kilograms	628	510	598	435 r/	500 e/
Iron and steel:						
Pig iron:						
For foundry use	thousand tons	204	227	219	263 r/	288
For steel production	do.	6,662	7,146	6,321	7,032 r/	5,841
Total	do.	6,866	7,373	6,540	7,295 r/	6,129
Ferrous alloys:						
Ferromanganese, from blast furnace		66,300	46,300	59,900	47,500 r/	50,152
From electric furnace:						
Ferromanganese		8,700	18,300	1,100	6,200 r/	6,500 e/
Ferrosilicomanganese		31,800	20,500	25,000 e/	20,000 r/ e/	20,000
Ferrosilicon		54,200	70,400	71,800	77,300 r/	75,000 e/
Other electric furnace ferroalloys		2,700	3,000	5,800	8,500 r/	6,087
Total		97,400	112,200	103,700	112,000 r/	107,587
Steel, crude:						
From open hearth furnaces	thousand tons	1,631	1,526	1,118	1,057 r/	494
From oxygen converters	do.	7,033	7,685	6,757	7,531 r/	6,223
From electric furnaces	do.	2,447	2,677	2,554	2,994 r/	3,197
Other	do.	2	2	3	2 e/	1 e/
Total	do.	11,113	11,890	10,432	11,584 r/	9,915
Semimanufactures:						
Hot rolled	do.	8,595	8,998	8,532	9,296 r/	7,987
Cold rolled	do.	1,611	1,943	1,788	1,982 r/	1,764
Pipe	do.	503	576	532	538 r/	500
Lead:						
Pb-Zn ore, gross weight	do.	4,871	5,040	5,034	4,938	5,052
Mine output:						
Pb content of Pb-Zn ore		72,200	69,000	74,900	68,800 r/	73,800
Pb content of Cu ore		28,500	25,000	38,600	39,000 r/	41,000 e/
Total		100,700	94,000	113,500	107,800 r/	114,800
Concentrate, gross weight		80,300	88,300	88,700	84,600 r/	85,000 e/
Pb content		52,600	59,200	59,800	55,600 r/	86,000 e/
Metal:						
Smelter:						
Primary		30,700	34,800	26,400	29,600 r/	30,000 e/
Secondary		35,700	38,600	43,000	43,700 r/	44,000 e/
Total		66,400	73,400	69,400	73,300 r/	74,000 e/
Refined		61,200	66,421	66,000	64,800 r/	64,300 e/
Selenium		60	73	73	76	60
Silver, mine output, Ag content, recoverable		1,064	1,001	935	1,038 r/	1,108
Zinc:						
Zn content:						
Mine output		182,800	183,200	186,500	182,900 r/	182,300
Concentrate output		151,000	154,500	159,000	158,300 r/	155,000 e/
Metal, smelter, primary and secondary		157,618	166,421	165,000	172,919 r/	178,016
Barite:						
Crude		26,600	22,400	21,700	3,400 r/	--
Beneficiated		9,100	6,100	6,200	600 r/	--

See footnotes at end of table.

TABLE 1--Continued
POLAND: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1994	1995	1996	1997	1998	
INDUSTRIAL MINERALS						
Cement:						
Klinker for cement	thousand tons	12,558	12,602	11,756	12,739	11,974
Hydraulic cement	do.	13,834	13,914	13,939	15,003 r/	14,970
Portland cement	do.	12,383	12,589	12,668	13,824	13,934
Clays:						
Bentonite		1,100	1,500	1,800	-- r/	24,000
Fuller's earth		5,200	4,800	6,200	6,100	6,000 e/
Fire clay	thousand tons	319	275	248	199 r/	175
Kaolin:						
Crude	do.	294	269	281	262 r/	270 e/
Beneficiated	do.	53	53	72	84 r/	82
Diamond, synthetic	thousand carats	270	256	206	35 r/	50 e/
Diatomite		2,900	2,200	1,700	1,200 r/	1,200
Feldspar:						
Run of mine		46,000	46,000	64,000	74,000 r/	77,000
Beneficiated		41,400 r/	44,100	58,300 r/	75,700 r/	75,000 e/
Gypsum and anhydrite, crude 4/	thousand tons	1,055	1,023	991	1,035	1,029
Lime, hydrated and quicklime	do.	2,516	2,526	2,363	2,516	2,406
Magnesite:						
Ore, crude	do.	30,000	26,000	21,000	30,000 r/	30,000 e/
Concentrate	do.	16,400	21,500	19,300	6,403 r/	5,745
Calcined		15,000	1,200	800	400 r/	500 e/
Nitrogen, N content of ammonia	thousand tons	1,230 r/	1,415 r/	1,405 r/	1,427 r/	1,299
Salt:						
Rock	do.	750	812	923	791 r/	748
Other	do.	3,324	3,402	3,240	3,188 r/	3,257
Total	do.	4,074	4,214	4,163	3,979 r/	4,005
Sand, excluding glass sand:						
Foundry sand	do.	507	521	1,067	1,035 r/	979
Filling sand	do.	18,765	19,067	17,510	14,155 r/	13,695
Lime-sand brick production sand	thousand cubic meters	1,453	1,435	1,086	799 r/	800 e/
Silica:						
Quartz and quartz crystal		39,900	14,200	55,200	77,600 r/	26,883
Quartz, refractory		208,000	233,000	294,000	205,000 r/	204,000
Quartz schist		11,400	8,500	6,500 r/	6,518 r/	3,100
Glass sand	thousand tons	759	874	1,111	1,124 r/	1,375
Glass:						
Construction, flat	do.	266	327	322	426 r/	523
Technical	do.	46	48	52	52 r/	65
Commercial	do.	54	64	67	70	74
Packing	do.	712	777	811	873 r/	918
Sodium compounds, n.e.s.:						
Carbonate (soda ash), 98%	do.	979 r/	1,001 r/	893 r/	933 r/	983
Caustic soda (96% NaOH)	do.	591 r/	653 r/	705 r/	718 r/	807
Stone:						
Dolomite, mine output	do.	6,409	8,123 r/	7,109 r/	7,086 r/	7,100 e/
Limestone, for lime production	do.	12,230	12,079	12,764	13,136 r/	13,000 e/
Limestone for nonlime end use	do.	26,760	27,036	26,748	28,201 r/	28,000 e/
Crushed and dimension stone, mine output	do.	16,632 r/	19,780	19,258	21,087 r/	28,006
Sulfur:						
Native, frisch	do.	2,129	2,392	1,745 r/	1,673 r/	1,345
Byproduct:						
From metallurgy		200	210	200 e/	256 r/	260
From petroleum		34	33	30 e/	44 r/	57
Total		234	243	230 e/	300 r/	317
From gypsum e/		12	12	12	12	10
Grand total		2,375	2,647	1,987 r/	1,985 r/	1,672
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Bituminous	thousand tons	133,933	137,166	137,987	137,793 r/	115,726
Lignite	do.	66,770	63,547	63,845	63,169	62,820
Total	do.	200,703	200,713	201,832	200,962 r/	178,546

See footnotes at end of table.

TABLE 1--Continued
POLAND: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1994	1995	1996	1997	1998
MINERAL FUELS AND RELATED MATERIALS--Continued					
Coke					
Coke oven thousand tons	11,454	11,579	10,340	10,536 r/	9,847
Gashouse do.	2	--	--	--	-- e/
Total do.	11,456	11,579	10,340	10,536 r/	9,847
Fuel briquets, all grades do.	99	110	96	80 r/	64
Gas:					
Natural million cubic meters	4,635	4,803	4,754	4,836 r/	4,852
Manufactured:					
Town gas do.	15	33	16	10 r/	2
Coke oven gas do.	4,840	4,872	4,247	4,414 r/	4,145
Generator gas e/ do.	399 3/	400	400	400	400
Total do.	5,254	5,305	4,663	4,824	4,547
Natural gas liquids e/ thousand 42-gallon barrels	30	30	30	30 e/	35 e/
Peat, fuel and agricultural thousand tons	109	199	198	206 r/	243
Petroleum:					
Crude, reported do.	284	292	317	289 r/	357
Refinery products 5/ do.	27,795	28,435	30,000 e/	14,885 r/	16,191

e/ Estimated. r/ Revised.

1/ Table includes data available through May 2000.

2/ In addition to commodities listed, antimony and germanium, associated with polymetallic deposits, and cobalt and nickel, associated with copper ores, are produced in quantities that so far have not warranted further recovery.

3/ Reported figure.

4/ Includes building gypsum, as well as an estimate for gypsum used in the production of cement.

5/ Includes virtually all major products.

TABLE 2
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 1998 1/

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Aluminum:			
Primary	Huta Aluminium "Konin" S.A.	Konin	50.
Secondary	Zakłady Metalurgiczne "Skawina" Zakłady Metali Lekkich SA "Kety" Zakłady Metalurgiczne "Trzebinia"	Skawina Kety Trzebinia	20.
Barite	Kopalnia Barytu "Buguszow" Sp. zo.o.	Boguszow, Stanislawow	40.
Cement	20 cement plants (in order of size): Gorazdze, Ozarow, Chelm, Warta, Malogoszcz, Nowiny, Strzelce, Opolskie, Kujawy, Rudniki, Wierbica, Nowa Huta, Rejowice, Odra, Warszawa, Groszowice, Polcement-Saturn, Wysoka, Cem-Con, Wick, Wejherowo	Primarily in southern Poland. Kujawy, Warszawa, Cem-Con, and Wejherowo, central and northern Poland.	16,000.
Coal:			
Anthracite	Zaklad Wydobywczwo Przetworczy Antracytu Walbrzych-Gaj	Lower Silesia	200.
Bituminous	Bytomska Spolka Weglowa S.A. Rudzka Spolka Weglowa S.A. Gliwicka Spolka Weglowa S.A. Katowicki Holding Weglowy S.A. Nadwislanska Spolka Weglowa S.A. Rybnicka Spolka Weglowa S.A. Jastrzebska Spolka Weglowa S.A. Seven independent mines Walbrzyskie Kopalnie Wegla Kamiennego KWK "Nowa Ruda" KWK "Bogdanka" S. A.	Upper Silesia (9 mines) do. (6 mines) do. (7 mines) do. (11 mines) do. (8 mines) do. (5 mines) do. (6 mines) do. Lower Silesia do. do.	140,000.

See footnote at end of table.

TABLE 2--Continued
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 1998 1/

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Lignite	KWK "Belchatow"	Belchatow	75,000.
	KWK "Turow"	Turow	
	KWK "Konin"	Konin	
	KWK "Adamow"	Adamow	
	KWK "Sieniawa"	Sieniawa	
Coke	Zaklady Koksownicze im. Powstancow Sl.	Upper Silesia	12,000.
	Zaklady Koksownicze "Przyjazn"	do.	
	Kombinat Koksochemiczny "Zabrze"	do.	
	Huta im. Sendzimira	do. (Krakow)	
	Huta "Czestochowa"	do. (Czestochowa)	
Zaklady Koksownicze "Walbrzych"	Lower Silesia		
Copper:			
Concentrate, gross weight	Kombinat Gorniczo Hutniczy Miedzi (KGHM) Polska Miedz S.A.	Mines and concentrators at Konrad, Lubin, Polkowice, Rudna, and Sierszowice	1,900 (385 Cu).
Metal, refined	do.	Refineries at Glogow I, Glogow II, and Legnica	415.
Feldspar	Strzeblowskie Kopalnie Surowcow Mineralnych	Mine at Sobotka, Lower Silesia, workings at Pagorki Zachodnie and Pagorki Wschodnie	50
Ferroalloys:			
Electric furnace (FeSiMn, FeMn, FeCr, FeSi)	Huta "Laziska"	Upper Silesia at Laziska Gome	170.
Blast furnace (FeMn)	Huta "Pokoje" S.A.	Upper Silesia, Ruda Slaska	90.
Gold kilograms	KGHM "Polska Miedz" S.A.	Refinery at Glogow "Trzebinia"	550.
Gypsum and anhydrite	Zaklady Przemyslu Gipsowego "Dolina Nidy"	Southeastern Poland, Gacki	1,400.
	Zaklad Gipsowy "Stawiany"	Southeastern Poland, Szarbkow	
	Kopalnia Anhydrytu "Nowy Lad"	Lower Silesia, Niwnice	
	KGHM "Polska Miedz" S.A.	Lower Silesia, Iwiny	
Helium million cubic meters	Zaklad Odazotowania Gazu	Western Poland, Odolanow	3.
Kaolin	KSM "Surmin-Kaolin" S.A.	Lower Silesia, Nowogrodziec	50.
Lead-zinc:			
Concentrate	Zaklady Gorniczo-Hutnicze "Boleslaw"	Mines and concentrators at Olkusz and Pomorzany, Bukowno region	60 Pb, 160 Zn.
	Zaklady Gornicze "Trzebinia" S.A.	Mines and concentrator at Trzebinia	
Metal:			
Pb, refined	Huta Cynku "Miasteczko Slaskie"	Refinery at Miasteczko Slaskie	60.
Do.	Huta Metali Niezelaznych "Szopienice"	Katowice	35.
Zn, refined	Huta Cynku "Miasteczko Slaskie"	Imperial Smelter at Miasteczko Slaskie	60.
Do.	Zaklady Metalurgiczny "Silesia" (input from Huta "Miasteczko Slaskie")	Refinery at Katowice	(30).
Do.	Zaklady Gorniczo-Hutnicze "Boleslaw"	Refinery at Boleslaw	65.
Do.	Huta Metali Niezelaznych "Szopienice"	Katowice	28.
Lime	In order of size:		4,500.
	Zaklady Przemyslu Wapienniczego Trzuskawica	Kieleckie County, Swietokrzyskie Mountains	
	Slaskie Zaklady Przemyslu Wapienniczego Opolwap S.A.	Opole County	
	Zaklady Przemyslu Wapienniczego Bukowa	Kieleckie County	
	Kombinat Cementowo-Wapienniczny Kujawy S.A.	Bydgoskie County	
	Zaklady Cementowo-Wapienniczne Gorazdze S.A.	Opole County	
	Zaklady Cementowo-Wapienniczne Nowiny	Kieleckie County	
	Produkcyjno-Handlowo-Uslugowe Wapmo-Sabinow	Czestochowa County	
	Wojcieszowskie Zaklady Przemyslu Wapienniczego Sp. z o.o.	Jeleniogorskie County	
Zaklady Przemyslu Wapienniczego w Sulejowie	Piotrkowskie County		
Zaklad Wapienniczny w Plazie	Katowickie County		
Natural gas million cubic meters	Ministry of Mining and Energy	Gasfields at pre-Carpathian foothills, Carpathian Mountains Lowlands, near Ostrow Wielkopolski, Poznan, and Trzebnica, north of Wroclaw	4,900.
Nitrogen:			
Ammonia (NH ₃)	Zaklady Azotowe "Pulawy" S.A.	Pulawy in eastern Poland	2,400
	Zaklady Azotowe "Kedzierzyn" S.A.	Kedzierzyn in Upper Silesia	
	Zaklady Azotowe "Wloclawek" S.A.	Wloclawek in central Poland	
	Zaklady Azotowe S.A. w Tarnowie	Tarnow in southern Poland	
	Zaklady Azotowe S.A. w Chorzowie	Chorzow in Upper Silesia	
	Zaklady Chemiczne "Police"	Police in northwest Poland	
Fertilizer (N)	do.	do.	1,700.

See footnote at end of table.

TABLE 2--Continued
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 1998 1/

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Petroleum:			
Crude	Polskie Gornictwo Naftowe i Gazownictwo Warszawa	Oilfields in northern and northwestern lowlands; sub-Carpathian region and Carpathian Mountains	200.
Do.	Predsiębiorstwo Poszukiwan i Eksploatacji Rpy i Gazu "Petrobaltic"	Baltic Sea Shelf	100
Refined	"Petrochimia-Plock" Rafineria "Gdansk" Rafineria "Czechowice" Rafineria "Trzebinia" Rafineria "Glimar" Gorilice Rafineria "Jedlicze" Podkarpackie Zaklady Rafyneryjne w Jasle	Plock in central Poland Gdansk in northern Poland Czechowice in southern Poland Trzebinia in southern Poland Gorilice in southern Poland Jedlicze in southern Poland Jaslo in southern Poland	13,500.
Salt, all types	Inowroclawskie Kopalnie Soli S.A. Kopalnia Soli "Klodawa" Kopalnia Soli "Wieliczka" Kopalnia Soli "Bochnia" KGHM "Polska Miedz" S.A. Kopalnia Wegla Kamiennego "Debiensko" Janikowskie Zaklady Sodowe "Janikosoda" S.A.	Gora, Mogilno I, and Mogilno II mines at Inowroclaw in central Poland Klodawa in central Poland Wieliczka in southern Poland, near Krakow, mining deposits at Barycz and Wieliczka Southern Poland, mines at the Lezkowice and Siedlec-Moszczenica-Lapczyca deposit. Not known to have operate in 1996 Sierszowice in southwestern Poland Debiensko, Upper Silesia Janikowo in central Poland	6,500.
Selenium	Huta Metali Niezelaznych 'Szopienice" KGHM "Polska Miedz" S.A.	Katowice Refinery at Glogow	80.
Silver	do. Zaklady Metalurgiczne Trzebinia	Refined from dore produced by the Szopienice Pn-Zn smelter-refinery largely from KGHM supplied slimes	1.
Steel:			
Crude and semimanufactures	Huta "Katowice" S.A. P.P. Huta im. T. Sendzimir P.P. Huta "Zawierciu" P.P. Huta "Czestochowa" Huta "Ostrowiec" S.A. P.P. Huta "Labyd" Huta "Lucchini-Warszawa" Sp. z o.o. P.P. Huta "Florian" Huta "Stalowa Wola" S.A. Huta "Jednosc" S.A. Huta "Batory" S.A. P.P. Huta "Baildon" Huta "Malapanew" S.A. Huta "Zabrze" S.A. Huta "Zygmunt" S.A.	Plant at Dobrowa Gornicza, producing pig iron, crude steel, hot rolled-products, and cast steel Steelworks at Krakow, producing pig iron, crude steel, hot-rolled products, cold-rolled products, pipes, and cast iron Steelworks at Zawierciu, producing crude steel, hot-rolled products, cast iron, and cast steel Steelworks at Czestochowa, producing pig iron, crude steel, hot-rolled sheets, pipes, and cast iron Steelworks at Ostrowiec-Swietokrzyski, producing crude steel, hot rolled products Steelworks at Gliwice, producing crude steel, and hot-rolled products Steelworks in Warsaw, producing crude steel, hot-rolled products, and cold-rolled strip Steelworks in Swietochlowicach, producing crude steel, hot-rolled products, galvanized sheet, and cold-rolled strip Steelworks at Stalowa Wola, producing crude steel Steelworks at Siemianowice Slaskie, producing crude steel, hot-rolled products, and pipes Steelworks at Chorzow, producing crude steel, hot-rolled products, and pipes Steelworks in Katowice, producing crude steel, hot- rolled products, cold-rolled strip, and cast steel Steelworks at Ozimek, producing crude steel and cast steel Steelworks at Zabrze, producing crude steel, cast iron, and cast steel Steelworks at Bytom, producing crude steel, cast iron, and crude steel	14,000 (crude).

See footnote at end of table.

TABLE 2--Continued
POLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 1998 1/

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Steel--Continued:			
Semimanufactures only	P.P. Huta im. Cedlera	Steelworks in Sosnowiec, producing hot-rolled products, cold-rolled strip, and cast iron	
	P.P. Huta "Kosciuszko"	Steelworks at Chorzow, producing hot-rolled products	
	Huta "Pokoj" S.A.	Steelworks at Ruda Slaska, producing hot-rolled products	
	Huta "Andrzej" S.A.	Steelworks at Zawadskie, producing pipes	
	Huta "Ferrum" S.A.	Steelworks in Katowice, producing pipes	
	P.P. Huta "Bobrek"	Steelworks in Bytom, producing pig iron, hot-rolled products, and cast iron	
	Huta "Buczek" S.A.	Steelworks in Sosnowiec, producing pipes and cast iron	
	P.P. Huta "1 Maja"	Steelworks in Gliwice, producing hot-rolled products	
	Zaklad Wielkopiecowy "Szczecin" Sp. z o.o.	Steelworks at Szczecin, producing pig iron	
Sulfur	P.P. Kopalnie i Zaklady Przetworcze Siarki "Siarkopol"	Operations at Tarnobrzeg, mining the Jeziorko-Grebow-Wydza deposit.	5,700.
	P.P. Kopalnie i Zaklady Chemiczne Siarki "Siarkopol"	Operations at Grzybow, mining the Osiek and Grzybow-Gacki deposits.	

1/ The data presented in this table were compiled, in large measure, from information provided in the Minerals Yearbook of Poland (Bilans Gospodarki Surowcami Mineralnymi w Polsce Na Tle Gospodarki Swiatowej 1995) prepared and published by the Department of Mineral and Energy Policy, Mineral and Energy Economy Research Centre of the Academy of Science of Poland, The Ministry of Environmental Protection, Natural Resources, and Forestry. Additionally, very valuable information and criticism was provided by Mr. Krystof Galos and other members of this academic department.